

Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) An image display device, comprising:

 a display unit having a plurality of display pixels;

 a resolution conversion device that makes image data for a plurality of pixels from original image data for each pixel and generates resolution-converted image data including the image data of the plurality of made pixels;

 a viewing angle range adjustment device that sets grayscale values of each pixel of the resolution-converted image data so that the grayscale values of each pixel differs from an adjacent pixel in a vertical direction or in a horizontal direction of the resolution-converted image data; and

 a display device for displaying the resolution-converted image data on the display unit;

 wherein in a case that a vertical observation direction to a surface of the display unit is a 0 degree observation direction, the viewing angle range adjustment device sets grayscale value of one of the pixel and the adjacent pixel based on display characteristics of a -30 degrees observation direction and sets grayscale value of the other one of the pixel and the adjacent pixel based on display characteristics of a +30 degrees observation direction;

 the display device displays the original image data on the display unit if the original image data has a number of pixels corresponding to a number of displayed pixels; and pixels;

 the resolution conversion device makes image data and the viewing angle range adjustment device sets grayscale values if the original image data has a number of pixels lower than the number of display pixels; and

after converting the resolution, the viewing angle range adjustment device sets greyscale values of pixels of the resolution-converted image data generated by the resolution conversion device.

2. (Original) The image display device according to Claim 1, the viewing angle range adjustment device setting the difference between grayscale values of the adjacent pixels in the vertical direction to be more than a predetermined grayscale value.

3. (Canceled)

4. (Previously Presented) The image display device according to Claim 1, the viewing angle range adjustment device comprising:

a lookup table that stores the display characteristics of the display unit; and
a device that determines the grayscale value of each pixel with reference to the lookup table.

5. (Currently Amended) An image display device, comprising:
a display unit;
a resolution-conversion resolution conversion device that makes image data for a plurality of pixels from original image data for each pixel and generates resolution-converted image data including the image data of the plurality of made pixels;
a viewing angle range adjustment device that sets grayscale values of each pixel of the resolution-converted image data generated by the resolution conversion device so that the grayscale values of each pixel differs from an adjacent pixel in a vertical direction or in a horizontal direction of the resolution-converted image data; and
a display device for displaying the resolution-converted image data on the display unit;
wherein the each pixel has sub pixels corresponding to a plurality of colors;
and

after a resolution conversion, the viewing angle range adjustment device adjusts a viewing angle range for each color of the plurality of colors by setting the grayscale value of each sub pixel of one pixel to a different grayscale value than the other sub pixels of the one pixel.

6. (Previously Presented) The image display device according to Claim 5, each sub pixel corresponding to each color of R, G, and B;

the viewing angle range adjustment device comprising:
a lookup table that stores display characteristics of the display unit for each color of R, G, and B; and

a device that determines the grayscale values of the sub pixels for each color with reference to the lookup table.

7. (Currently Amended) An image display device, comprising:

a display unit having a plurality of display pixels;
a resolution conversion device that makes image data for a plurality of pixels from original image data for each pixel and generates resolution-converted image data including the image data of the plurality of made pixels;

a viewing angle range adjustment device that sets grayscale values of each pixel of the resolution-converted image data generated by the resolution conversion device so that the grayscale values of each pixel differs from an adjacent pixel in a vertical direction or in a horizontal direction of the resolution-converted image data;

a display device for displaying the resolution-converted image data on the display unit; and

an input unit that receives a command to select one of a wide viewing angle range and a narrow viewing angle range, the display device displays the resolution-converted image data adjusted by the viewing angle range adjustment device if the wide viewing angle

range mode is selected and displays the resolution-converted image data not adjusted by the viewing angle range adjustment device if the narrow viewing angle range mode is selected;

the display device displays the original image data on the display unit if the original image data has a number of pixels corresponding to a number of display pixels; and

the resolution conversion device makes image data and the viewing angle range adjustment device sets grayscale values if the original image data has a number of pixels lower than the number of display pixels.

8. (Currently Amended) An image display method to be executed in an image display device with a display unit, comprising:

making image data for a plurality of pixels from original image data for each pixel and generating resolution-converted image data including the image data of the plurality of made pixels;

setting grayscale values of each pixel of the resolution-converted image data generated in the step of making image data so that the grayscale values of each pixel differs from an adjacent pixel in a vertical direction or in a horizontal direction of the resolution-converted image data; and

displaying the resolution-converted image data on the display unit; wherein each pixel has sub pixels corresponding to a plurality of colors; and further comprising:

adjusting a viewing angle range for each color of the plurality of colors by setting the grayscale value of each sub pixel of one pixel to a different grayscale value than the other sub pixels of the one pixel.

9. (Currently Amended) An image display program stored on a recordable medium to be executed in an image display device having a display unit and a computer, the image display program making the computer function as:

a resolution conversion device that makes image data for a plurality of pixels from original image data for each pixel and generates resolution-converted image data including the image data of the plurality of made pixels;

a viewing angle range adjustment device that sets grayscale values of each pixel of the resolution-converted image data generated by the resolution conversion device so that the grayscale values of each pixel differs from an adjacent pixel in a vertical direction or in a horizontal direction of the resolution-converted image data are different; and

a display device for displaying the resolution-converted image on the display unit; wherein

each pixel has sub-pixels corresponding to a plurality of colors; and after a resolution conversion, the viewing angle range adjustment device adjusts a viewing angle range for each color of the plurality of colors by setting the grayscale value of each sub pixel of one pixel to a different grayscale value than the other sub pixels of the one pixel.

10. (Currently Amended) An image display method to be executed in an image display device with a display unit having a plurality of pixels, comprising:

making image data for a plurality of pixels from original image data for each pixel and generating resolution-converted image data including the image data of the plurality of made pixels;

setting grayscale values of each pixel of the resolution-converted image data generated in the step of making image data so that the grayscale values of each pixel differs from an adjacent pixel in a vertical direction or in a horizontal direction of the resolution-converted image data; and

displaying the resolution-converted image data on the display unit; wherein

in a case that a vertical observation direction to a surface of the display unit is a 0 degree observation direction, setting grayscale value of one of the pixel and the adjacent pixel based on display characteristics of a -30 degrees observation direction and setting grayscale value of the other one of the pixel and the adjacent pixel based on display characteristics of a +30 degrees observation direction; and

displaying the original image data on the display unit if the original image data has a number of pixels corresponding to a number of display pixels; and

making image data and setting grayscale values if the original image data has a number of pixels lower than the number of display pixels.

11. (Currently Amended) An image display program stored on a recordable medium to be executed in an image display device having a display unit having a plurality of pixels and a computer, the image display program making the computer function as:

a resolution-conversion device that makes image data for a plurality of pixels from original image data for each pixel and generates resolution-converted image data including the image data of the plurality of made pixels;

a viewing angle range adjustment device that sets grayscale values of each pixel of the resolution-converted image data generated by the resolution conversion device so that the grayscale values of each pixel differs from an adjacent pixel in a vertical direction or in a horizontal direction of the resolution-converted image data; and

a display device for displaying the resolution-converted image data on the display unit; wherein

in a case that a vertical observation direction to a surface of the display unit is a 0 degree observation direction, the viewing angle range adjustment device sets grayscale value of one of the pixel and the adjacent pixel based on display characteristics of a

-30 degrees observation direction and sets grayscale value of the other one of the pixel and the adjacent pixel based on display characteristics of a +30 degrees observation direction;

the display device displays the original image data on the display unit if the original image data has a number of pixels corresponding to a number of display pixels; and

the resolution conversion device makes image data and the viewing angle range adjustment device sets grayscale values if the original image data has a number of pixels lower than the number of display pixels.